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Senator John McCain
Committee on Commerce, Science, and Transportation
United States Senate
Washington, D.C. 20510-6125
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Dear Senator McCain:

In response to your invitation to speak to the Senate Committee on Commerce, Science, and Transportation, I would like to submit the following material as part of the written record. Over the last five years, I have been working with a distinguished group of researchers from across the United States measuring the impacts of climate change on the US economy. The initial study, edited by Robert Mendelsohn and James Neumann and published in 1999 by Cambridge University Press, was entitled "The Impact of Climate Change on the United States Economy". A subsequent book entitled "Global Warming and the American Economy: A Regional Assessment of Climate Change" is being prepared for publication at present. Following is the introduction and the synthesis of results of this new book.

The critical insight of both of these new books is that adaptation matters. Empirical research indicates that households and firms will respond to climate change and reduce damages and enhance benefits. Coupled with more careful modeling of dynamic effects, carbon fertilization, and ecosystem change, the new results are far more optimistic than the old studies. These estimates do not include nonmarket effects in health, ecosystem change, and aesthetics, but it is not clear that these nonmarket effects will be large in the United States.

Climate change is likely to result in small net benefits for the United States over the next century. The primary sector that will benefit is agriculture. The large gains in this sector will more than compensate for damages expected in the coastal, energy, and water sectors, unless warming is unexpectedly severe. Forestry is also expected to enjoy small gains. Added together, the United States will likely enjoy small benefits of between $14 and $23 billion a year and will only suffer damages in the neighborhood of $13 billion if warming reaches 5C over the next century. Recent predictions of warming by 2100 suggest temperature increases of between 1.5 and 4C, suggesting that impacts are likely to be beneficial in the US.

The impact of warming depends upon the initial temperature of each region. With mild warming of 1.5 C, every region benefits from warming. The average American would enjoy benefits of about $100/yr. However, with 2.5C warming, the cooler northern regions of the country benefit far more than the warmer southern regions. The average citizen in the north would enjoy benefits of about $80/yr whereas southern citizens would enjoy average benefits of only about $6/yr. If warming rises to 5C, the benefits in the north shrink to about $40 per person, but citizens in the south may suffer damages from $120 to $370 per person.

In summary, climate change does not appear to be a major threat to the United States for the century to come. There is little motivation for expensive crash programs to curb short term emissions of greenhouse gases. The focus of mitigation policy should remain on inexpensive ways to control global emissions over the next century.

Sincerely

Robert Mendelsohn
Edwin Weyerhaeuser Davis Professor

TABLE 1
National Impacts

Sector	Old Results	New Results
Agriculture	-17.5 to –1.1	19.6
Forestry	-3.3 to –0.7	3.7
Water	-7.0 to –15.6	-2.2
Coastal	-7.0 to –12.2	-0.2
Energy	-9.9 to –0.5	-5.8
TOTAL	-44.7 to –13.8	15.1

Sources: Nordhaus [1991], Cline [1992], Fankhauser [1995] , Tol [1995], Mendelsohn [2000].

Regional Impacts
(Billions of USD/yr)
2.5C, 7% Precipitation Scenario

Region	Sector					
	Agr	For	Ene	Coa	Wat	Total
Northeast	2.6	1.9	-0.4	-0.1	0.0	4.0
Midwest	5.4	1.1	-0.1	-0.0	-0.0	6.4
N Plains	2.8	0.6	-0.1	-0.0	-0.1	3.2
Northwest	1.1	-0.1	1.4	-0.0	-1.7	0.7
Southeast	4.2	-0.8	-3.0	-0.1	-0.0	0.3
S. Plains	2.1	0.6	-2.4	-0.0	-0.2	0.1
Southwest	1.4	0.4	-1.2	-0.0	-0.2	0.4
National	19.6	3.7	-5.8	-0.2	-2.2	15.1

Regional Impacts
(USD/per capita/yr)

Region	Climate Scenario		
	1.5C 15%P	2.5C 7%P	5.0C 0%P
Northeast	28	52	19
Midwest	84	84	36
N Plains	539	359	75
Northwest	410	80	-369
Southeast	91	6	-122
S. Plains	129	5	-266
Southwest	80	11	-134
National	97	52	-56